

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re application of : Attorney Docket  
No.: SLUTTER-RE  
Applicant: SLUTTER et al. :  
  
Application No.: (Unknown) Reissue of Patent No. 5,995,221 : GAU: Unknown  
Filed: (herewith) : Examiner: Unknown  
For: "MODIFIED CONCENTRIC SPECTROGRAPH" :  
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November 30, 2001

BOX REISSUE  
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**PRELIMINARY AMENDMENT  
WITH STATUS OF CLAIMS AND SUPPORT FOR CLAIM CHANGES  
PURSUANT TO 37 CFR §1.173(c)**

SIR:

Prior to calculation of the filing fee, please make the following amendments:

**IN THE CLAIMS:**

Please CANCEL claims 15-65 and 67-83.

Please AMEND claims 1 and 66 to read as follows:

1. (amended) A concentric spectrograph comprising:

a grating, an optical axis, a meridian plane, and a grooved concave surface, said meridian plane containing the grating optical axis, extending perpendicularly to

the parallel grooves and having a first and second sides, the first side being a volume residing above the meridian plane and a the second side being a volume residing below the meridian plane;

a lens having a substantially planar surface, a convex surface, and an optical axis, wherein said lens convex surface faces said grating concave surface, and said optical axes of said grating and said lens are substantially coaxial or parallel; an entrance port located out of said meridian plane on said first side so that incident light is introduced to the lens at a location out of said meridian plane and on said first side; and

an exit port located out of said meridian plane on said second side for receiving one order of diffracted light without significant mixing with adjacent orders of diffracted light.

## REMARKS

The amendments are made to correct at least one error in the patent and to reduce the filing fees to be paid.

Respectfully submitted,

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## "VERSION WITH MARKINGS TO SHOW CHANGES MADE"

1. (amended) A modified concentric spectrograph comprising:

- a grating, an optical axis, a meridian plane; and a grooved concave surface, said meridian plane containing the grating optical axis, extending perpendicularly to the parallel grooves and having a first and second sides, the first side being a volume residing above the meridian plane and a the second side being a volume residing below the meridian plane;
- a lens having a substantially planar surface, a convex surface, and an optical axis, wherein said lens convex surface is facing faces said grating concave surface; and said optical axes of said grating and said lens being are substantially coaxial or parallel;
- an primary entrance port being located substantially out of said meridian plane toward on said first side so that incident light is introduced to the lens at a location out of said meridian plane and on said first side; and
- an primary exit port being located substantially out of said meridian plane toward on said second side for receiving an one order of diffracted light that maximizes throughput and minimizes astigmatism without significant mixing with adjacent orders of diffracted light.

66. (amended) A method for dispersing light comprising:

passing polychromatic light through an entrance port located substantially on a first side of and at a perpendicular distance from a meridian plane of a concave diffraction grating;

directing said polychromatic light with a lens toward said grating so that  
said light is incident on said grating at least at said meridian plane;  
diffracting said light with said diffraction grating, thereby dispersing  
said light; and

imaging said dispersed light with said lens at an exit port located  
substantially on a second side of said meridian plane for receiving ~~an~~ one  
order of light ~~that maximizes throughput and minimizes astigmatism without~~  
significant mixing with adjacent orders of diffracted light.

## STATUS OF CLAIMS AND SUPPORT FOR CLAIM CHANGES

### *Status of Claims*

Claims 1 and 66 are amended.

Claims 2-14 are pending.

Claims 15-65 and 67-83 are canceled.

### *Support for Claim Changes*

Support for language added to the claims may be found in the original patent, *inter alia*, at the locations indicated in the following marked up copies of the amended claims:

1. (amended) A ~~modified~~ concentric spectrograph comprising:

- a grating, an optical axis, a meridian plane; and a grooved (*column 1, lines 23-25*) concave surface, said meridian plane containing the grating optical axis, extending perpendicularly to the parallel grooves (*column 1, lines 32-34*) and having a first and second sides, the first side being a volume residing above the meridian plane and a the second side being a volume residing below the meridian plane (*column 1, line 25*);
- a lens having a substantially planar surface, a convex surface, and an optical axis, wherein said lens convex surface is facing faces said grating concave surface, and said optical axes of said grating and said lens being are substantially coaxial or parallel (*column 10, lines 39-40*);  
an primary entrance port being located substantially out of said meridian plane  
toward on said first side so that incident light is introduced to the lens at a

location out of said meridian plane and on said first side (*column 10, lines 32-34*

*and Figure 9, especially reference 250); and*

an primary exit port being located substantially out of said meridian plane toward  
on said second side for receiving an one order of diffracted light that maximizes  
throughput and minimizes astigmatism without significant mixing with adjacent  
orders of diffracted light (*column 5, lines 11-13 and column 9, lines 57-59*).

66. (amended) A method for dispersing light comprising:

passing polychromatic light through an entrance port located substantially  
on a first side of and at a perpendicular distance from a meridian plane of  
a concave diffraction grating;

directing said polychromatic light with a lens toward said grating so that  
said light is incident on said grating at least at said meridian plane;  
diffracting said light with said diffraction grating, thereby dispersing  
said light; and

imaging said dispersed light with said lens at an exit port located  
substantially on a second side of said meridian plane for receiving an one  
order of light that maximizes throughput and minimizes astigmatism without  
significant mixing with adjacent orders of diffracted light (*column 5, lines 11-13 and*  
*column 9, lines 57-59*).